

NRM 95-184 Effect of Activity on Sleep of Cognitively-Impaired Veterans

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BACKGROUND / RATIONALE:

Sleep-activity rhythm disturbance is a highly prevalent, disabling symptom in cognitively-impaired (CI) elders. Their nocturnal sleep is light and inefficient with frequent arousals and awakenings. Multiple short daytime napping episodes interfere with daytime activity and functioning. Furthermore, daytime disruptive behaviors, such as pacing, hitting, and cursing, are related significantly to sleep-activity rhythm disturbance. Interventions for sleep-activity rhythm disturbance consist primarily of pharmacological agents. Medical treatment for sleep and behavior disturbances with benzodiazepines or antipsychotic medications has proven only minimally effective and has serious side effects such as impairments in cognition, memory, coordination, and balance; tolerance and severe rebound insomnia; and tardive dyskinesia. Feasible, cost-effective nonpharmacological interventions that address the precipitating causes of sleep-activity rhythm disturbance require testing.

OBJECTIVE(S):

Activity is proposed as one nonpharmacological intervention for nocturnal sleep disturbance, but no one has tested its efficacy. The degree of daytime sleepiness in elders may reflect a reduction in the purposive physical, cognitive, and affective activities that previously sustained daytime alertness and promoted psychological well-being. For some institutionalized elders, living in a physically, cognitively, and emotionally understimulating setting may induce excessive napping during the day with a subsequent adverse impact on circadian sleep-wake patterns. Concrete, reality-based activities may counter napping by keeping residents with dementia involved in the world around them and helping them meet important psychological, physical, and social needs. Our pilot study with five nursing home residents demonstrated

that activities timed to occur during usual naptime and tailored to residents' interests and their remaining abilities improved nocturnal sleep. Our other research has shown that engaging residents in meaningful activity improved their psychological well-being and decreased certain types of disruptive behaviors.

METHODS:

Therefore, we tested the effect of an Individualized Activity Intervention timed to occur when the resident usually napped in the daytime on nocturnal sleep as measured by actigraphy in CI nursing home residents. Examples of individualized activities include objects for tactile and visual stimulation, arts and crafts, and games. We also tested the effect of the intervention on psychological well-being and disruptive behavior, and measured its cost. After the collection of baseline sleep, disruptive behavior, and psychological well-being data for five days, residents were randomly assigned to the Individualized Activity Intervention or to a usual care control condition for 21 days. On days 17-21, the research assistant repeated the outcome measures.

FINDINGS / RESULTS:

The final sample consisted of 139 residents from eight nursing homes. Mean percent nocturnal time asleep was 54.95 % (sd = 20.96) while minutes of nighttime sleep ranged from 21 to 648 minutes (mean = 353.18 minutes). Surprisingly, over 1/3 of the sample (N = 55) slept >7 hours at night, indicating that some residents sleep rather well in the nursing home. The project nursing assistants successfully engaged the residents in the Individualized Activity Intervention. When compared to the control group, daytime sleep significantly decreased ($p = .001$) in the experimental group, but there were no significant differences in nocturnal sleep. Because of the extended time participants were confined to bed (mean = 10.64 hours), the study inclusion criteria of <85% of the night asleep incorporated a number of residents who did not have disturbed sleep. Based on the assumption that the intervention was designed to improve nocturnal sleep in residents with sleep disturbance, we chose to analyze data from only those ($n = 50$) who slept 5 ½ or fewer hours at baseline. The results indicated that minutes of daytime sleep significantly decreased ($p = .005$) in the experimental group, while there was no change in the control group. There was a trend for minutes nighttime sleep to increase in the experimental group compared to the control group ($p = .09$). When compared to the control group, participants in the experimental group were awake less ($p = .04$), and fell asleep faster ($p = .03$).

STATUS:

Secondary data analysis on psychological well-being, disruptive behavior, and cost of the intervention is in progress.

IMPACT:

Sleep significantly improved in residents with disturbed sleep who received the Individualized Activity Intervention.

PUBLICATIONS: None at this time.